

IN THE CLAIMS

Please amend the claims to read as follows:

Listing of Claims

1. (Currently Amended) A system for establishing a remote communications pipe between a PSD and a remote computer system over a network comprising a local client for use as a host to said PSD, wherein said local client comprises a section that functionally connects to a PSD Interface and said network, and a section that functionally communicates over said network with said remote computer system; and further comprising:

a client communications section that transmits and receives message packets over said network using a packet based communications protocol, and that transmits and receives APDUs through said PSD Interface;

a first client data processing section receiving incoming message packets from said remote computer system using said client communications section, separating encapsulated APDUs from said incoming message packets thus generating desencapsulated APDUs and routing said desencapsulated APDUs to said PSD through said PSD Interface independently of the origin and integrity of said incoming message packets; and

a second client data processing section receiving incoming APDUs from said PSD interface, encapsulating said incoming APDUs into outgoing message packets and routing said outgoing message packets to said remote computer system through said client communications section.

2. (Previously Presented) The system according to claim 1 further comprising:

at least one PSD comprising a section that functionally connects to said PSD Interface and a section that functionally communicates through said Interface; and further comprising;

a PSD communications section that transmits and receives APDU messages through said PSD Interface; and

a PSD processing section that interprets said APDU messages, executes commands included in said APDU messages and transmits responses in APDU format through said PSD Interface using said communications section; and

a memory storage section that stores at least one unique identifier.

3. (Previously Presented) The system according to claim 1 further comprising:

at least one remote computer system comprising a section that functionally connects to said network and a section that functionally communicates with said local client and further comprising:

a server communications section that transmits and receives messages over said network using said packet based communications protocol;

a first server data processing section that receives requests from at least one applications level program, translates said requests into APDU format and transmits said APDU formatted requests to a second server data processing section,

a second server data processing section that encapsulates said APDU formatted requests received from said first server data processing section into outgoing message packets and

transmits said outgoing message packets over said network to said local client using said server communications section,

a third server data processing section that receives incoming messages from said local client using said server communications section and separates encapsulated APDUs from said incoming message packets thus generating desencapsulated APDUs and routing said desencapsulated APDUs to a fourth server data processing section; and

a fourth server data processing section that receives and translates said desencapsulated APDUs sent by said third server data processing section into another message format thus generating a translated message and transmitting said translated message to at least one applications level program.

4. (Original) The system according to claim 1 wherein said network is a public network.
5. (Original) The system according to claim 1 wherein said network is a private network.
6. (Original) The system according to claim 1 wherein said protocol is an open communications protocol.
7. (Original) The system according to claim 1 wherein said protocol is a secure communications protocol.
8. (Canceled).

9. (Previously Presented) The system according to claim 2, wherein said PSD comprises:

- a PSD communications section that transmits and receives encrypted APDU messages through said PSD Interface;
- a first PSD processing section that decrypts incoming encrypted APDU messages using stored cryptographic information, thus generating incoming decrypted APDU messages;
- a second PSD processing section that interprets said incoming decrypted APDU messages, and executes commands included in said incoming decrypted APDU messages;
- a third PSD processing section that encrypts outgoing APDU response messages using stored cryptographic information thus generating outgoing encrypted APDU response messages, and transmits said outgoing encrypted APDU response messages in said APDU format through said PSD Interface using said communications section; and
- a memory storage section that stores at least one unique identifier and at least one cryptographic key.

10. (Previously Presented) The system according to claim 3, wherein said remote computer system comprises:

- a server communications section that transmits and receives messages over said network using said packet based communications protocol;
- a cryptography data processing section;

a first server data processing section that receives requests from at least one applications level program, translates said requests into APDU format and transmits said APDU formatted requests to said cryptography data processing section;

a second server data processing section that encapsulates encrypted APDU formatted requests received from said cryptography data processing section into outgoing message packets and transmits said outgoing message packets over said network using said server communications section;

a third server data processing section that receives incoming message packets using said server communications section and separates encapsulated APDUs from said incoming message packets thus generating desencapsulated APDUs and routing said desencapsulated APDUs to said cryptography data processing section; and

a fourth server data processing section that receives and translates decrypted desencapsulated APDUs sent by said cryptography processing section into another message format thus generating a translated message and transmitting said translated message to at least one applications level program; wherein

said cryptography data processing section encrypts said APDU formatted requests received from said first server data processing section and sends said encrypted APDU formatted requests to said second server data processing section and decrypts said desencapsulated APDUs received from said third server data processing section and sends said decrypted desencapsulated APDUs to said fourth server data processing section.

11-14. (Canceled).

15. (Previously Presented) The system according to claim 1 wherein said network is a hardwired network.

16. (Previously Presented) The system according to claim 1 wherein said network is a digital cellular network.

17. (Previously Presented) The system according to claim 1 wherein said network is a wireless network.

18. (Previously Presented) The system according to claim 1 wherein said network is an optical network.

19. (Previously Presented) The system according to claim 1 wherein said network is a telephone acoustical network.

20. (Currently Amended) A method of establishing a communications pipe between a PSD and a remote computer system over a network using a client as a host to said PSD, wherein said client and said remote computer system are in functional communications using a packet based communications protocol over said network, said method comprising:

generating a request to access said PSD on said remote computer system, wherein said request is in a non-native protocol for communicating with said PSD and said request is generated by an API Level Program,

converting on said remote computer system said request from said non-native protocol into a PSD protocol data unit format message ~~an APDU format request message~~ using a first server data processing section,

encapsulating on said remote computer system said PSD protocol data unit format message ~~APDU format request message~~ into said packet based communications protocol producing an encapsulated request message, using a second server data processing section,

transmitting said encapsulated request message over said network using said packet based communications protocol,

receiving by said client said encapsulated request message sent over said network, processing said encapsulated request message using a first data processing section to separate said PSD protocol data unit format message ~~APDU format request message~~ from said encapsulated request message,

routing on said client said PSD protocol data unit format message ~~APDU format request message~~ through a hardware device port assigned to a PSD Interface independently of the origin and integrity of said encapsulated request message, wherein said PSD Interface is in processing communication with said PSD,

receiving by said PSD said PSD protocol data unit format message ~~APDU format request message~~ through said PSD Interface and processing said PSD protocol data unit format message ~~APDU format request message~~ using a first internal PSD data processing section,

generating a response message in APDU format by said PSD using a second internal PSD data processing section and transmitting said APDU format response message through said PSD Interface,

receiving by said client said APDU format response message through said PSD Interface and encapsulating said APDU format response message into said packet based communications protocol producing an encapsulated response message, using a second data processing section,

transmitting said encapsulated response message over said network using said packet based communications protocol,

receiving said encapsulated response message sent over said network by said remote computer system, processing said encapsulated response message using a third server data processing section to separate said APDU response message from said encapsulated response message thus generating a desencapsulated APDU response message, and

converting by said remote computer system said desencapsulated APDU response message into a response in a non-native protocol using a fourth server data processing section, and forwarding said response to at least one API Level Program.

21. (Original) The method according to claim 20 wherein said network is a public network.

22. (Original) The method according to claim 20 wherein said network is a private network.

23. (Original) The method according to claim 20 wherein said protocol is an open communications protocol.

24. (Original) The method according to claim 20 wherein said protocol is a secure communications protocol.

25. (Original) The method according to claim 20 wherein said communications pipe is initiated automatically upon connection of said PSD to said local client.

26. (Original) The method according to claim 20 wherein said communications pipe is initiated by a client requesting access to information contained on one or more networked clients.

27. (Original) The method according to claim 20 wherein said communications pipe is initiated by a client requesting access to information contained on one or more networked remote computer systems.

28. (Original) The method according to claim 20 wherein said communications pipe is initiated by one or more networked remote computer systems requesting access to said PSD.

29. (Currently Amended) A method of establishing a secure communications pipe between a PSD and a remote computer system over a network using a client as a host to said

PSD, wherein said client and said remote computer system are in functional communications using a packet based communications protocol over said network, said method comprising:

generating a request to access said PSD on said remote computer system, wherein said request is in a non-native protocol for communicating with said PSD and said request is generated by an API Level Program,

converting on said remote computer system said request from said non-native protocol into a PSD protocol data unit format message ~~an APDU format request message~~ using a first server data processing section, and sending said PSD protocol data unit format message ~~APDU format request message~~ to a cryptography data processing section,

receiving and encrypting said PSD protocol data unit format message ~~APDU format request message~~ using cryptography data processing section thus generating an encrypted APDU request message and sending said encrypted APDU request message to a second server data processing section, wherein said cryptography data processing section uses a pre-established encryption method,

encapsulating on said remote computer system said encrypted APDU request message into said packet based communications protocol producing an encapsulated and encrypted request message, using said second server data processing section,

transmitting said encapsulated and encrypted request message over said network using said packet based communications protocol,

receiving said encapsulated and encrypted request message sent over said network by said client, processing said encapsulated and encrypted request message using a first client data

processing section to separate said encrypted APDU request message from said encapsulated and encrypted request message thus generating a desencapsulated encrypted APDU request message,

routing on said client said desencapsulated encrypted APDU request message through a hardware device port assigned to a PSD Interface independently of the origin and integrity of said encapsulated and encrypted request message, wherein said PSD Interface is in processing communication with said PSD,

receiving said desencapsulated encrypted APDU request message through said PSD Interface by said PSD and decrypting said desencapsulated encrypted APDU request message using an internal PSD data cryptography section thus generating a desencapsulated and decrypted APDU request message, wherein said cryptography section is pre-established, and sending said desencapsulated and decrypted APDU request message messages to a first internal PSD data processing section,

receiving said desencapsulated and decrypted APDU request message from said internal PSD data cryptography section and processing said desencapsulated and decrypted APDU request message using said first internal PSD data processing section,

generating a response message in APDU format by said PSD using a second internal PSD data processing section, encrypting said APDU format response message using said internal PSD data cryptography section thus generating an encrypted APDU format response message and transmitting said encrypted APDU format response message through said PSD Interface,

receiving by said client said encrypted APDU format response message through said PSD Interface and encapsulating said encrypted APDU format response message into said packet

based communications protocol producing an encapsulated and encrypted response message, using a second client data processing section,

transmitting said encapsulated and encrypted response message over said network using said packet based communications protocol,

receiving by said remote computer system said encapsulated and encrypted response message sent over said network, processing said encapsulated and encrypted response message using a third server data processing section to separate said encrypted APDU response message from said encapsulated and encrypted response message thus generating a desencapsulated encrypted APDU response message,

decrypting said desencapsulated encrypted APDU response message received from said third server data processing section using said cryptography data processing section thus generating a desencapsulated and decrypted APDU response message and sending said desencapsulated and decrypted APDU response message to said fourth server data processing section, and

converting by said remote computer system said desencapsulated and decrypted APDU response message into a response in a non-native protocol using a fourth server data processing section, and forwarding said response to at least one API Level Program.

30. (Original) The method according to claim 29 wherein said network is a public network.

31. (Original) The method according to claim 29 wherein said network is a private network.

32. (Original) The method according to claim 29 wherein said protocol is an open communications protocol.

33. (Original) The method according to claim 29 wherein said protocol is a secure communications protocol.

34. (Original) The method according to claim 29 wherein said secure communications pipe is initiated by a client requesting access to information contained on one or more networked clients.

35. (Original) The method according to claim 29 wherein said secure communications pipe is initiated by a client requesting access to information contained on one or more networked remote computer systems.

36. (Original) The method according to claim 29 wherein said secure communications pipe is initiated by one or more networked remote computer systems requesting access to said PSD.

37. (Original) The method according to claim 20 or 29 wherein said network is a hardwired network.

38. (Original) The method according to claim 20 or 29 wherein said network is a digital cellular network.

39. (Original) The method according to claim 20 or 29 wherein said network is a wireless network.

40. (Original) The method according to claim 20 or 29 wherein said network is an optical network.

41. (Original) The method according to claim 20 or 29 wherein said network is a telephone acoustical network.

42. (Previously Presented) A method of establishing a remote communications pipe between a PSD and a remote computer system over a network using a local client as a host to said PSD, wherein said local client is in functional connection with a PSD interface, and wherein said local client and said remote computer system are in functional communications using a packet based communications protocol over said network, said method comprising:

the local client transmitting and receiving message packets respectively to and from said remote computer system over said network using a packet based communications protocol, and

transmitting and receiving APDUs through said PSD interface;

the local client receiving incoming message packets from said remote computer system, separating encapsulated APDUs from said incoming message packets thus generating desencapsulated APDUs and routing said desencapsulated APDUs to said PSD through said PSD Interface independently of the origin and integrity of said incoming message packets; and

the local client receiving incoming APDUs from said PSD interface, encapsulating said incoming APDUs into outgoing message packets and routing said outgoing message packets to said remote computer system.